

---

## Two New Species of *Aegiphila* (Verbenaceae) from Venezuela and Brazil

Gerardo A. Aymard and Nidia L. Cuello

UNELLEZ-Guanare, Programa de R. N. R., Herbario Universitario(PORT), Mesa de Cavacas, Estado Portuguesa, Venezuela 3350. gaymard@cantv.net, ncuello@cantv.net

---

**ABSTRACT.** Two new species, *Aegiphila aracaensis* from Brazil and *A. hystricina* from Venezuela, are described and illustrated, and their relationships with allied species are discussed. *Aegiphila aracaensis* shares morphological similarities with *A. venezuelensis* Moldenke, although it differs in leaf shape, length, and width, and in the corolla tube externally covered by a denser canescent indument. *Aegiphila hystricina* is a shrub to small tree distinguished by its congested elongate inflorescences, and the flowers subtended by three bracteoles covered by glandular trichomes, 8- to 10-septate. The species is related to *Aegiphila arcta* Moldenke, but differs from it in leaf shape, length, and width, petiolate leaves, and larger glandular trichomes.

**Key words:** *Aegiphila*, Brazil, Venezuelan Guayana, Verbenaceae.

*Aegiphila* Jacquin is a genus of Verbenaceae with over 130 species, ranging from southern Mexico to northern Argentina (Moldenke, 1934; Jansen-Jacobs, 1988), but being most diverse and widespread in the American tropics. The genus can be distinguished from the other Neotropical Verbenaceae by the following features: inflorescences as thyrses, cymes, or panicles, flowers heterostylous, calyx and corolla 4(or 5)-lobed and stamens 4(5), without staminodes. When examining *Aegiphila* specimens in preparation of the Verbenaceae treatment for the *Flora of the Venezuelan Guayana*, we noticed several specimens of *Aegiphila* that could not be placed with any known species in the genus. Further examination showed these to be new taxa, which are described below as new species.

***Aegiphila aracaensis*** Aymard & Cuello, sp. nov.

TYPE: Brazil. Amazonas: Barcelos, Rio Aracá, próximo a foz do Rio Jauari, 00°30'N, 63°30'W, 4 July 1985, I. Cordeiro 150 (holotype, MG; isotypes, NY, US). Figure 1.

*Aegiphilae venezuelensi* proxima, sed recedit: foliis oblanceolatis vel obovatis, 4–9 cm longis, 3–5 cm latis, petiolis 2–4 mm longis; pedunculo florifero 1.5–3.5 cm longo; calycibus 4–5 mm longis; lobis calycis ca. 0.2 mm

longis, corollis extus dense adpresse-canescens et lobis corollae 1–2 mm longis; staminibus 7–10 mm longis.

Shrub to 3 m tall; branches and branchlets obtusely tetragonal, densely appressed-villous, gray hairs on the younger parts, glabrescent when mature. Leaves membranous, oblanceolate or obovate, 4–9 × 3–5 cm, apex acuminate, base attenuate; margin subsinuate, mostly in the upper half, sparsely appressed-canescens on adaxial and abaxial surfaces; pubescence denser on the midrib and on secondary veins on the abaxial surface; secondary veins 7 to 9 per side; petioles 2–4 mm long, appressed-villous with gray hairs. Inflorescence axillary, peduncle 1.5–3.5 cm long, cymose, two per node toward the apex of the branchlets; rachis and pedicels densely appressed-canescens. Flowers pedicellate, pedicels slender, 5–7 mm long, bracteoles not seen, caducous; calyx 4–5 mm long, densely appressed-canescens externally, glabrous internally, the lobes 4, triangular, ca. 0.2 mm long; corolla tube 4–6 mm long, white, denser appressed-canescens externally, mostly in the upper half, glabrous internally, the lobes 4, imbricate, 1–2 mm long, the apex acute; stamens 4, inserted ca. 4 mm from the base of the tube, exserted, filaments 7–10 mm long, glabrous, anthers oblong, ca. 0.5 mm long; ovary obconical, ca. 1 mm long, glabrous, style ca. 6 mm long, glabrous, bifid, exserted, stigmas 2, ca. 1.5 mm long. Fruit not seen.

**Distribution and habitat.** *Aegiphila aracaensis* was found in gallery forest at the base of the Serra do Aracá (ca. 200 m), Amazonas state, Brazil, one of the least known sandstone mountains of the Guayana Highland. The Serra do Aracá has a high level of endemism in which isolated species would be expected, supported by unique floristic elements and vegetation types (Prance & Johnson, 1992). The vegetation is often physiognomically distinctive and usually is characterized by unusual life forms. The area harbors such genera as *Bonnetia* Martius and *Arcythaea* Martius (Bonnetiaceae), *Raveniopsis* Gleason (Rutaceae), *Tepuianthus* Maguire & Steyermark (Tepuianthaceae), *Saxofridericia* R. H.

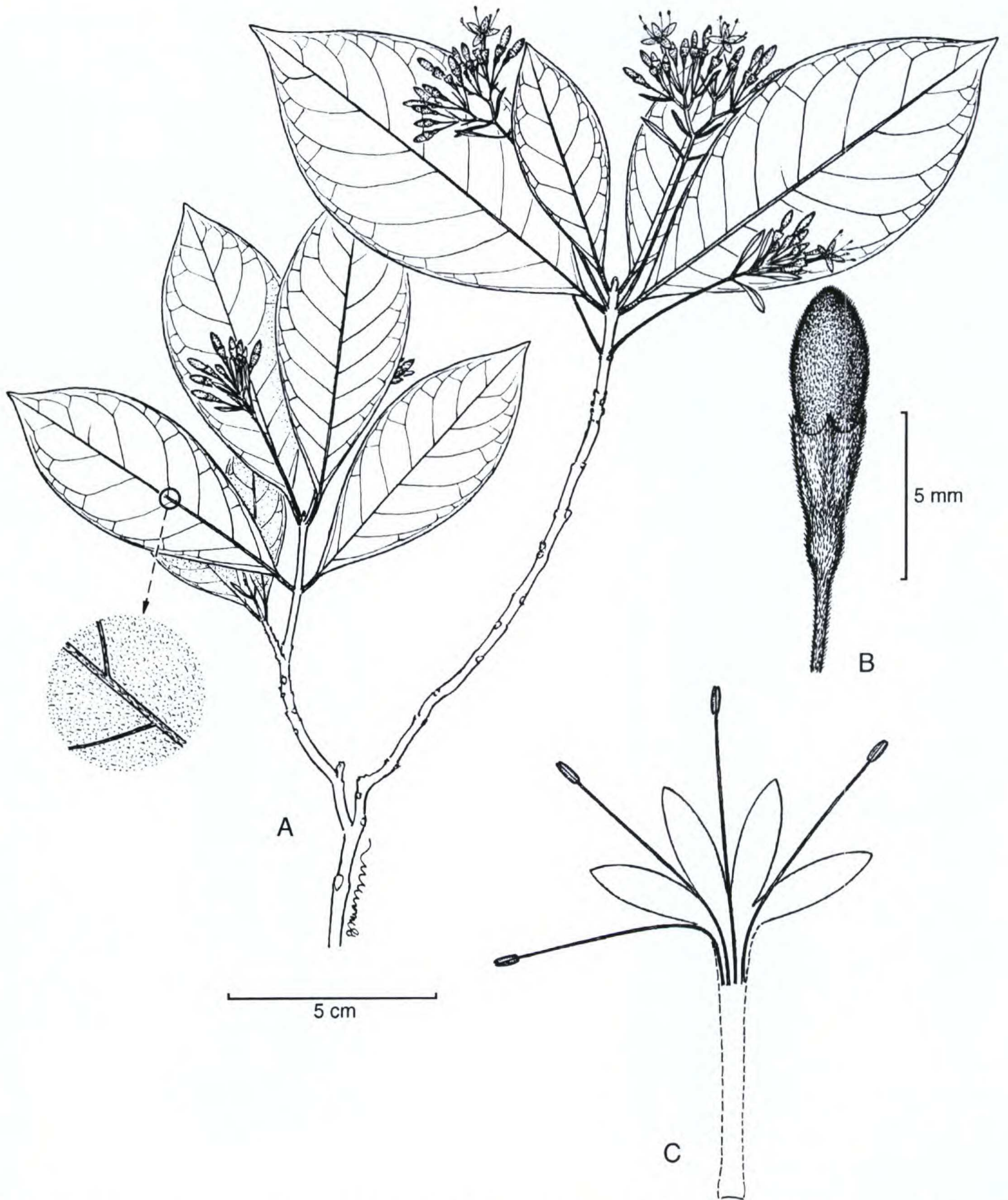


Figure 1. *Aegiphila aracaensis* Aymard & Cuello. —A. Flowering branch with detail of lower leaf surface. —B. Flower bud showing the appressed pubescence. —C. Medial section of flower showing the stamens with pistil removed. Drawn from the holotype, *Cordeiro 150* (US). Scale bar in B applies to C.

Schomburgk (Rapataceae), and *Stenopadus* Blake (Asteraceae), which are restricted to the “tepui,” or tabletop mountains in the Guayana Shield in northern South America (Berry et al., 1995). The word “tepui” is used by the Pemón Amerindians in southeastern Venezuela to designate this type of

mountain. However, it is now used for all mountains with the same shape and geology found in the Guayana Shield (Huber, 1995). These mountains have been characterized as biological islands due to their shape and isolation from each other. They are formed by a layer of sandstone (the Roraima for-

Table 1. Comparison of the distinguishing character states of *Aegiphila aracaensis* and *A. venezuelensis*.

Characters	<i>A. aracaensis</i>	<i>A. venezuelensis</i>
Habitat	lowland forest (100–200 m)	medium montane to high-tepui forests (1400–2600 m)
Leaves	oblanceolate or obovate, 4–9 cm long, 3–5 cm wide	elliptic or ovate-elliptic, 9–23 cm long, 3–9 cm wide
Petiole	2–4 mm	6–15 mm
Peduncles	1.5–3.5 cm	3–6.5 cm
Calyx	4–5 mm long; lobes ca. 0.2 mm long	6–8 mm long; lobes ca. 2–2.5 mm long
Corolla	densely appressed-canescenscent externally; lobes 1–2 mm long	glabrous externally; lobes ca. 4 mm long
Stamens	7–10 mm long	2–4 mm long

mation) that lies over an igneous base dated at ca. 3.5 billion y B.P. (Huber, 1994; Michelangeli, 2000).

*Relationships.* Because of its four stamens and four corolla lobes, and the inflorescence axillary

and cymose, *Aegiphila aracaensis* belongs to section *Aegiphila*, group *Cymosae* (Moldenke, 1934). The inflorescence and calyx externally covered by a canescent indument related it to *A. duckei* Moldenke and *A. venezuelensis* Moldenke. However, this new species is most closely allied with *A. venezuelensis*, a species endemic to the medium- to high-elevation tepui forests (1400–2600 m) in the Guayana shield in Venezuela (Moldenke, 1953; López-Palacios, 1977) and can be distinguished from the latter by the characters indicated in Table 1.

***Aegiphila hystricina*** Aymard & Cuello, sp. nov.

TYPE: Venezuela. Bolívar: La Gran Sabana, ca. 2 km NW of Kamarata valley, along a savannah river, 450 m, 22 Feb. 1967, *T. Koyama & G. Agostini* 7254 (holotype, VEN; isotype, NY). Figure 2.

*Aegiphilae arctae* affinis, sed foliis ellipticis vel ovato-ellipticis, 8–13 cm longis, 3–6 cm latis; marginibus dense ciliatis, ambabus paginis glanduloso-villosis, pilis glandulosis ca. 2 mm longis, 8–9 septatis, petiolis 4–5 mm longis et bracteolis pilis 1.5–2 mm longis, 8–10 septatis obtectis differt.

Shrub or small tree to 6 m tall; branches and

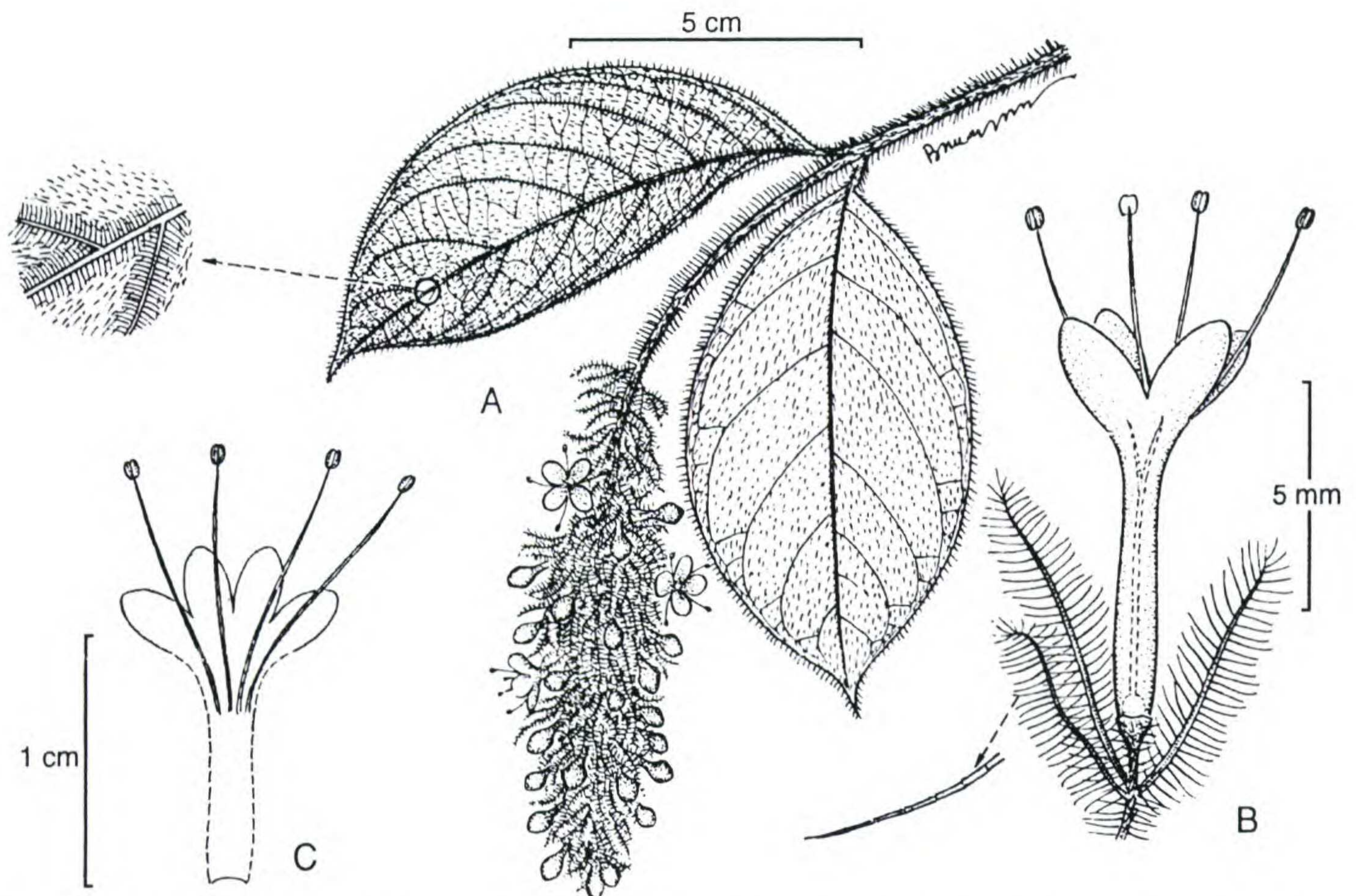


Figure 2. *Aegiphila hystricina* Aymard & Cuello. —A. Flowering branch with detail of lower leaf surface. —B. Flower subtended by the three bracteoles covered by the longer trichomes, ovary, pistil, and stigma represented by dotted lines. —C. Medial section of flower showing the stamens with pistil removed. Drawn from the holotype, *Koyama & Agostini* 7254 (VEN).

Table 2. Comparison of the distinguishing character states of *Aegiphila hystricina* and *A. arcta*.

Characters	<i>Aegiphila hystricina</i>	<i>Aegiphila arcta</i>
Branches, branchlets, and peduncles	yellow-gray pubescent	brown pubescent
Leaves	elliptic or ovate-elliptic, 8–13 cm long, 3–6 cm wide, glandulose villose on both surfaces, glandulose trichomes, ca. 2 mm long, 8–9-septate, margin densely ciliate	oblanceolate or obovate, 10–18 cm long, 5–8 cm wide, sparsely glandulose villose on both surfaces, glandulose trichomes, ca. 0.4 mm long, 2–4-septate, margin sparsely ciliate
Petiole	4–5 mm	0.5–1 mm
Bracteole vestiture	trichomes 1.5–2 mm long, 8–10-septate	trichomes ca. 5 mm long, 3–4-septate
Fruit	5–6 mm long, sparsely glandular-pubescent	ca. 10 mm long, glabrescent

branchlets obtusely tetragonal, densely appressed-villous with yellow-gray hairs on the younger parts, glabrescent when mature. Leaves membranous, elliptic or ovate-elliptic, 8–13 × 3–6 cm, apex acuminate, base acute, margin entire, densely ciliate, glandular villose on adaxial and abaxial surfaces, denser on the midrib and secondary veins, glandular trichomes ca. 2 mm long, 8–9-septate; secondary veins 8 to 10 per side, elevated on the abaxial surface; petioles 4–5 mm long, densely appressed-villous with yellow-gray hairs. Inflorescence terminal thyrses, pendent, very congested, peduncle elongate, 8–11 cm long, rachis and pedicels densely appressed-villous with yellow-gray hairs. Flowers subtended by three bracteoles at the base of the pedicels, bracteoles linear, 5–10 mm long, densely covered by glandular trichomes, 1.5–2 mm long, 8–10-septate, pedicel 2–3 mm long; calyx 1–1.5 mm long, sparsely glandular pilose externally, glabrous internally, the lobes 4, ca. 0.2 mm long, triangular-ovate, ciliate-glandular, corolla tube 6–10 mm long, yellow-green, glabrous on both sides, the lobes 4, 2–4 mm long, imbricate, shortly glandular-ciliate at the margins; the stamens 4, inserted ca. 5 mm from the base of the tube, exerted, filaments 8–10 mm long, glabrous, anthers oblong, ca. 1 mm long; ovary obconical, ca. 1 mm long, glabrous, style ca. 4 mm long, inserted, glabrous, bifid, stigmas 2. Fruit globose, 5–6 mm long, appressed glandular-pubescent, mature calyx membranous and persistent, 3–4 mm long, sparsely glandular-pubescent, subtended by the three persistent bracteoles.

*Distribution and habitat.* *Aegiphila hystricina* is known from savanna and forest ecotone areas in Venezuela and farther southeast in the Rio Araguari, Amapá state, in Brazil. In both regions, the species occurs at elevations between 100 and 450 m.

*Local names.* “Huerayä daö eö” (Piaroa), from *J. Contreras 117* (VEN).

Because of its four stamens and four corolla lobes, terminal inflorescence, and calyx not deeply dentate, *Aegiphila hystricina* belongs to section *Aegiphila*, group *Paniculatae*, subgroup *Edentatae* (Moldenke, 1934; López-Palacios, 1977). The inflorescence very congested, and the linear bracteoles subtending the flowers, covered by glandulose trichomes at the base of the pedicels, places this new species next to *A. arcta* Moldenke, from Yaracuy state in the Coastal Cordillera in Venezuela (Moldenke, 1972). *Aegiphila hystricina* can be distinguished from *A. arcta* by the characters indicated in Table 2.

Herbarium specimens of *Aegiphila hystricina* were previously referred to *A. fendleri* Moldenke, a species from the mountain forests in the Andes of Colombia and Venezuela. However, the new species differs from *A. fendleri* in its leaves elliptic or ovate-elliptic and the base acute (vs. lanceolate-oblong to oblong and the base rounded or subcordate); petiole 4–5 mm long (vs. 7–12 mm long); branches, branchlets, petioles, leaves on the lower surface, and calyces covered by a yellow-gray indument (vs. all parts of the plant covered by a ferruginous indument); and inflorescences thyrses (vs. cymes).

*Paratypes.* VENEZUELA. **Amazonas:** Atures, alto río Carinagua, 05°45'N, 67°20'W, *J. Contreras 117* (VEN). **Bolívar:** Cedeño, Maniapure, Hato Pisurca, 06°55'N, 66°32'W, *A. Fernández 16938* (PORT). BRAZIL. **Amapá:** Rio Araguari, betw. Cachoeiras Travessao & Santa Maria, 01°09'N, 51°52'W, *J. M. Pires, W. Rodrigues & G. C. Irvine 50394* (NY).

*Acknowledgments.* We are grateful to H. van der Werff (MO) and B. Manara (VEN) for revising the Latin descriptions; Victoria C. Hollowell and two anonymous reviewers for comments on the

manuscript; B. Manara (VEN) for preparing the illustrations; and the Missouri Botanical Garden and New York Botanical Garden staff for making their facilities available for our research.

#### Literature Cited

- Berry, P., O. Huber & B. Holst. 1995. Floristic analysis and phytogeography. Pp. 161–192 in P. E. Berry, B. Holst & K. Yatskievych (volume editors), *Flora of the Venezuelan Guayana*, Vol. 1 (Introduction). Missouri Botanical Garden Press, St. Louis.
- Huber, O. 1994. Recent advances in the phytogeography of the Guyana region, South America. *Mém. Soc. Biogéogr.* 4: 53–63.
- . 1995. Geographical and physical features. Pp. 1–62 in P. E. Berry, B. Holst & K. Yatskievych (volume editors), *Flora of the Venezuelan Guayana*, Vol. 1 (Introduction). Missouri Botanical Garden Press, St. Louis.
- Jansen-Jacobs, M. J. 1988. Fasc. 4. 148. Verbenaceae. In: A. R. A. Görts-van Rijn (editor), *Flora of the Guianas*. Koeltz, Königstein.
- López-Palacios, S. 1977. Verbenaceae. *Flora de Venezuela*, U.L.A., Mérida.
- Michelangeli, F. 2000. Species composition and species-area relationships in vegetation isolates on the summit of a sandstone mountain in southern Venezuela. *J. Trop. Ecol.* 16: 69–82.
- Moldenke, H. 1934. A monograph of the genus *Aegiphila*. *Brittonia* 1: 245–477.
- . 1953. Botanical exploration in Venezuela, Verbenaceae. *Fieldiana (Bot.)* 28: 512–516.
- . 1972. A new species of *Aegiphila* from Venezuela. *Acta Bot. Venez.* 6: 93–94.
- Prance, G. T. & D. M. Johnson. 1992. Plant collections from the Plateau of Serra do Aracá (Amazonas, Brazil) and their phytogeographic affinities. *Kew Bull.* 47: 1–24.